State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
217/785-8604

2200 Churchill Road, Springfield, IL 62794-9276

February 4, 1993

Southern Illinois University - Edwardsville
Attn: David McDonald
Science Building
Edwardsville, IL 62026

Refer to: 1190255002 -- Madison County
Southern Illinois University Science Bldg.
Closure Plan Approved: April 20, 1992
Closure Log #: C-619
Part A #: 148
ILD006331342
RCRA CLOSURE

Dear Mr. McDonald:

The subject hazardous waste management facility was inspected by a representative of this Agency on January 22, 1993. The inspection revealed that the closure activity was completed in accordance with the approved closure plan dated April 20, 1992.

Certification that the Hazardous Waste Container Storage Area (S01) and the Hazardous Waste Treatment Unit (T04) have been closed in accordance with the approved closure plan by the owner/operator, Southern Illinois University - Edwardsville, and an independent registered professional engineer, Randall L. Patchett P.E., of Illinois was received at this Agency December 16, 1992.

The Agency has determined that the closure of the Hazardous Waste Container Storage Area (S01) and the Hazardous Waste Treatment Unit (T04) has apparently met the requirements of Interim Status Standards, 35 Ill. Admin. Code, Part 725 (40 CFR, Part 265). Please note, the Agency has withdrawn your Part A permit application.

This facility must continue to meet requirements of 35 Ill. Adm. Code Parts 722 and 728.

If you have any questions, please contact Chris Cahnovsky at 618/346-5120.

Sincerely,

Glenn D. Savage

Glenn D. Savage, Manager
Field Operations Section
Division of Land Pollution Control
Bureau of Land

GDS:TJM:sjd
JR JK

cc: USEPA Region V, George Hamper
USEPA Region V, Kelley Moore
USEPA Region V, Jane Ratcliffe
Randall L. Patchett

SERVICES

Only Statements with Original Signatures will be Accepted!

Generator Name/Location: Southern Illinois University / Edwardsville, IL

EPA I.D. Number: ILD 006 331 342

Waste Profile or ARF Designation: 90-36-1, 90-36-2, 3, 4, 5, 6, 7, 8, 9, 14, 15, 16, 17, 18, 19, 20, 21

Manifest Number: 3886275, 3886276, 3886277, 3886278, 3886279

EPA Hazardous Waste Number(s): D002, D003, D006, D001, D002, D009, D011,

Waste Analysis Attached? YES _____ NO X _____ On file at facility.

___ Unrestricted Waste Notification (Category 1)
I notify that I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

X Restricted Waste Notification (Category 2)
I notify that I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is subject to the treatment standards specified in 40 CFR 268, Subpart D. Waste must be treated to the appropriate regulatory treatment standard or, by the appropriate regulatory treatment method.

Category 6 - Lab Pack Certification

(6a) Organometallic (inorganic)

X I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only the wastes specified in Appendix IV to Part 268 or solid wastes not subject to regulation under 40 CFR Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

Notification of Corresponding Treatment Standard: Incineration followed by stabilization of residues to demonstrate compliance with 40 CFR 268.42(g).

(6b) Organic

X I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste and that the lab pack contains only organic waste specified in Appendix V to Part 268 or solid wastes not subject to regulation under 40 CFR Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

Notification of Corresponding Treatment Standard: Incineration

SIGNATURE: _____ DATE: 10/12/92

PRINT NAME: SRIDHAR GOSHIKE TITLE: General Assistant, HWM SIUE

Only Original Signatures will be Accepted

Generator Name/Location: Southern Illinois University

Sheet 1 of 2 Sheets

EPA ID Number: ILD 006 331 342 Manifest Number: 3866215, 3866276, 3866277, 3866278

Waste Profile or ARF	Category #	EPA or State Waste Code	Variance Date	Sub Category	Treatability Group (WW or NWW)	40 CFR Ref.	Specific Treatment Technology	Legend #	Other
90-36-1	2,6a	D007			WWW		INCIN Followed by STABL		
90-36-2	2,6a	D003			WWW		↓		
90-36-3	2,6a	D006			WWW		↓		
90-36-4	2,6b	D001		~~High~~ TOC	WWW		INCIN		
90-36-5	2,6a	D002		~~Acid~~	WWW		INCIN Followed by STABL		
90-36-6	2,6b	D001		~~Oxidizer~~	WWW		INCIN		
90-36-7					WWW		↓		
	2,6b	D003			WWW		↓		
90-36-8					WWW		↓		
	2,6b	D003			WWW		↓		
90-36-9	2	D009		High Mercury	WWW	268.42 Table 2	IMERC, RMERC		
	2,6a	D011			WWW		INCIN Followed by STABL		
90-36-14	2,6b	D001		High TOC	WWW		INCIN		
90-36-15	2,6b	D001		~~High~~ TOC	WWW		↓		
90-36-16	2,6b	D001		High TOC	WWW		↓		
90-36-17	2,6b	D001		~~High~~ TOC	WWW		↓		
90-36-18	2,6b	D001		~~High~~ TOC	WWW		↓		
90-36-19	2,6a	D001		~~Oxidizer~~	WWW		INCIN Followed by STABL		
	2,6a	D006			WWW		↓		
	2,6a	D007			WWW		↓		
90-3620	2,6b	D001			WWW		INCIN		

SIGNATURE: SRIDHAR GOCHIKE

PRINT NAME: SRIDHAR GOCHIKE

TITLE: Research Assistant, Hazardous Waste Management Unit

DATE: 10/22/92

Generator Name/Location: Southern Illinois University

EPA ID Number: ILD 006 331 342 Manifest Number: 3866279

Waste Profile or ARF	Category #	EPA or State Waste Code	Variance Date	Sub Category	Treatability Group (WW or NWW)	40 CFR Ref.	Specific Treatment Technology	Legend	Other
90-36-21					NWW		Incin		
	2,6b	D003			NWW		↓		

SIGNATURE: _____ TITLE: General Assistant, Hazardous Waste Manager

PRINT NAME: SRIDHAR GHANTI DATE: 10/22/92 SITE

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED!

SOUTHERN ILLINOIS UNIVERSITY AT EDWARDSVILLE

CLOSURE PLAN

for the

HAZARDOUS WASTE MANAGEMENT PROGRAM

Science Building

Rooms: SL 1209 and SL 0308

SIUE

Illinois 62026

Tel: 618-692-3562

In accordance with:
35 Il. Adm. Code Subpart G: Closure and Post-Closure

Revised: November 15, 1991
December 20, 1991

Hurst-Rosche Engineers, Inc.

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CLOSURE PLAN

INTRODUCTION

Southern Illinois University at Edwardsville (SIUE) submitted a Part A permit application to treat hazardous waste on March 23, 1987 (Attachment 1). The Illinois Environmental Protection Agency (IEPA) deadline for SIUE to submit an application for a Part B permit has already passed. As a result, the hazardous waste treatment area and the hazardous waste storage area at SIUE will have to go through the closure process. SIUE has determined that it is not necessary to obtain a Part B permit and will therefore request that the Part A application be withdrawn after closure has been finalized.

Once SIUE completes the closure process, the university will operate in accordance with IEPA rules for Small Quantity Generators (SQG's). According to an estimate of the quantity and types of hazardous waste generated at SIUE (Attachment 2), the university generates approximately 250 gallons per month. The IEPA will consider SIUE to be a SQG unless more than 265 gallons per month is generated. In addition, SIUE's waste minimization plan is anticipated to reduce the total amount of hazardous waste generated to an even lower level.

SIUE will implement tighter controls on the generation of acutely hazardous waste. Should SIUE generate more than 1 kilogram of an acutely hazardous waste per month, that waste stream will be handled in accordance with large quantity generator rules.

DESCRIPTION OF FACILITY

SIUE is a state university located in Edwardsville, Illinois. The Standard Industrial Code for SIUE is 8221. This is the code for colleges, universities, and professional schools. A site location map is presented in Figure 1. A site topographic map is presented as Figure 2. A more detailed map of SIUE is provided in Figure 3.

The closure activities will involve two areas of the Science Building. Room SL 1209 is the hazardous waste treatment area and Room SL0308 is the hazardous waste storage area (Figures 4 and 5). Blueprints of the facilities are provided in Attachments 3 and 4. These two rooms are the only hazardous waste treatment or storage areas at the facility. Both rooms will be closed in accordance with the provisions of this closure plan.

The treatment (T04) area is a laboratory with approximately 1755 square feet of room. The ceiling material consists of 4-foot by 2-foot tiles. The walls consist of drywall construction material and the floor covering material is ceramic tiles. There are no floor drains located

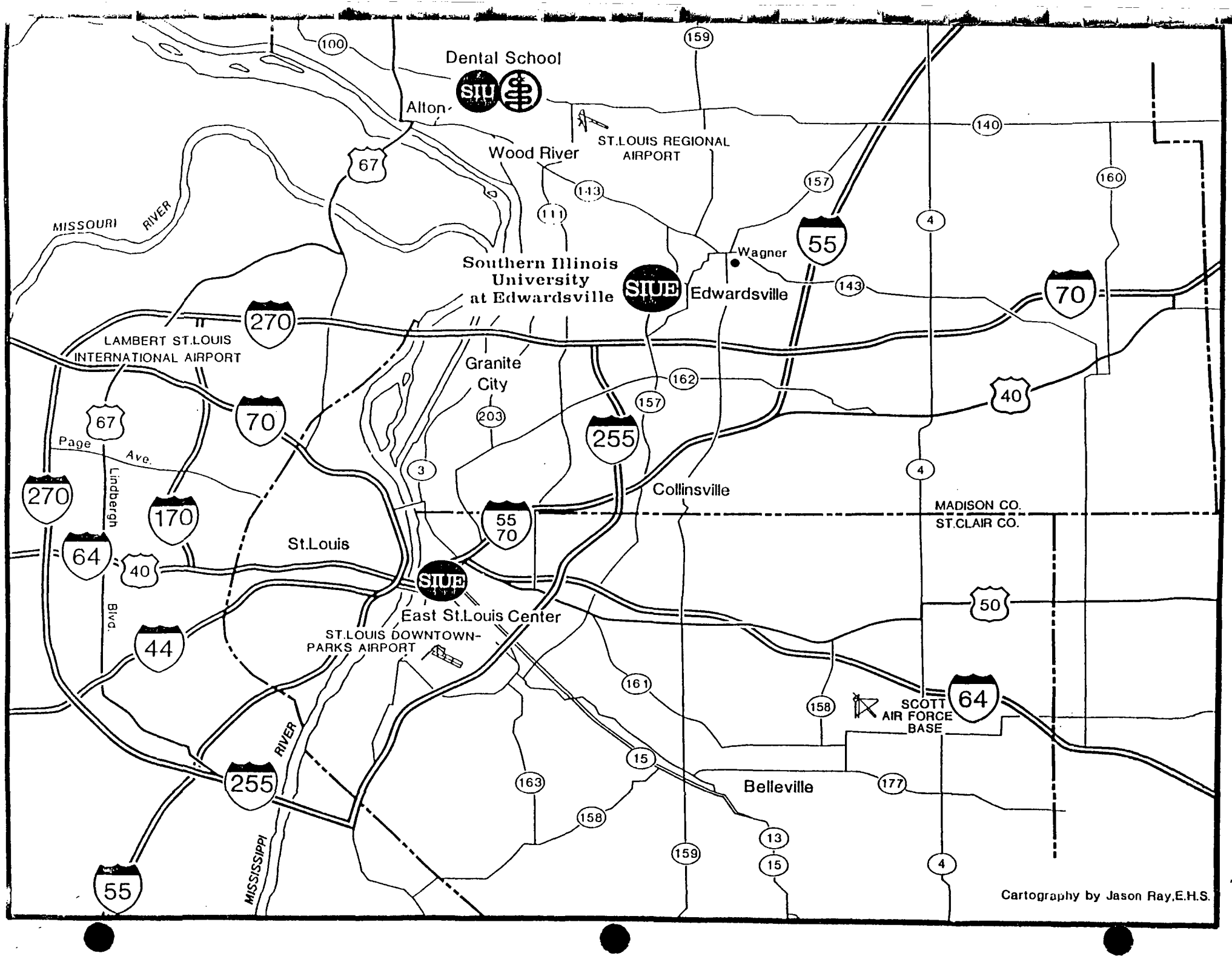
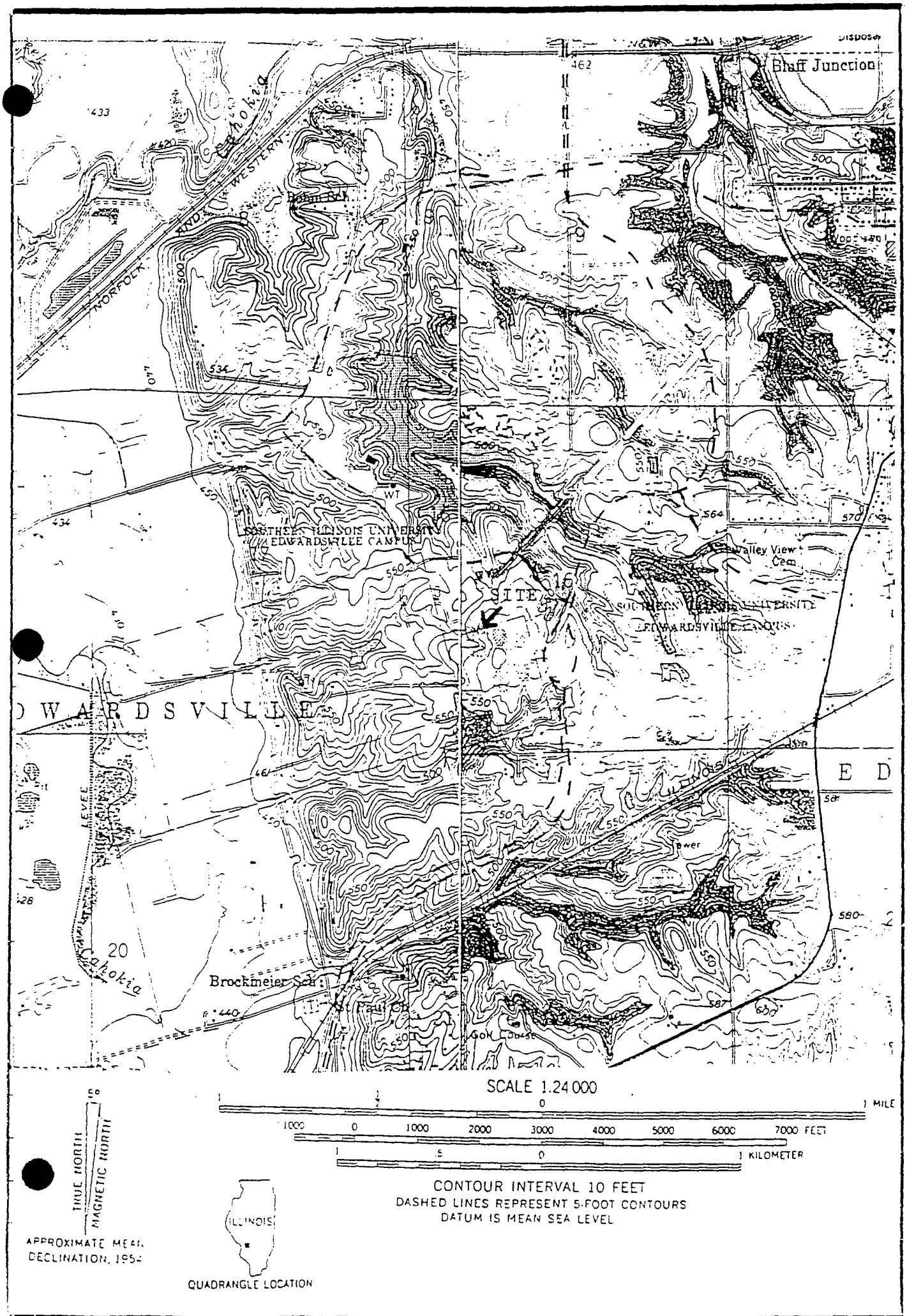


FIGURE 1 - SIUE Location Map

FIGURE 2 - Site Topographic Map



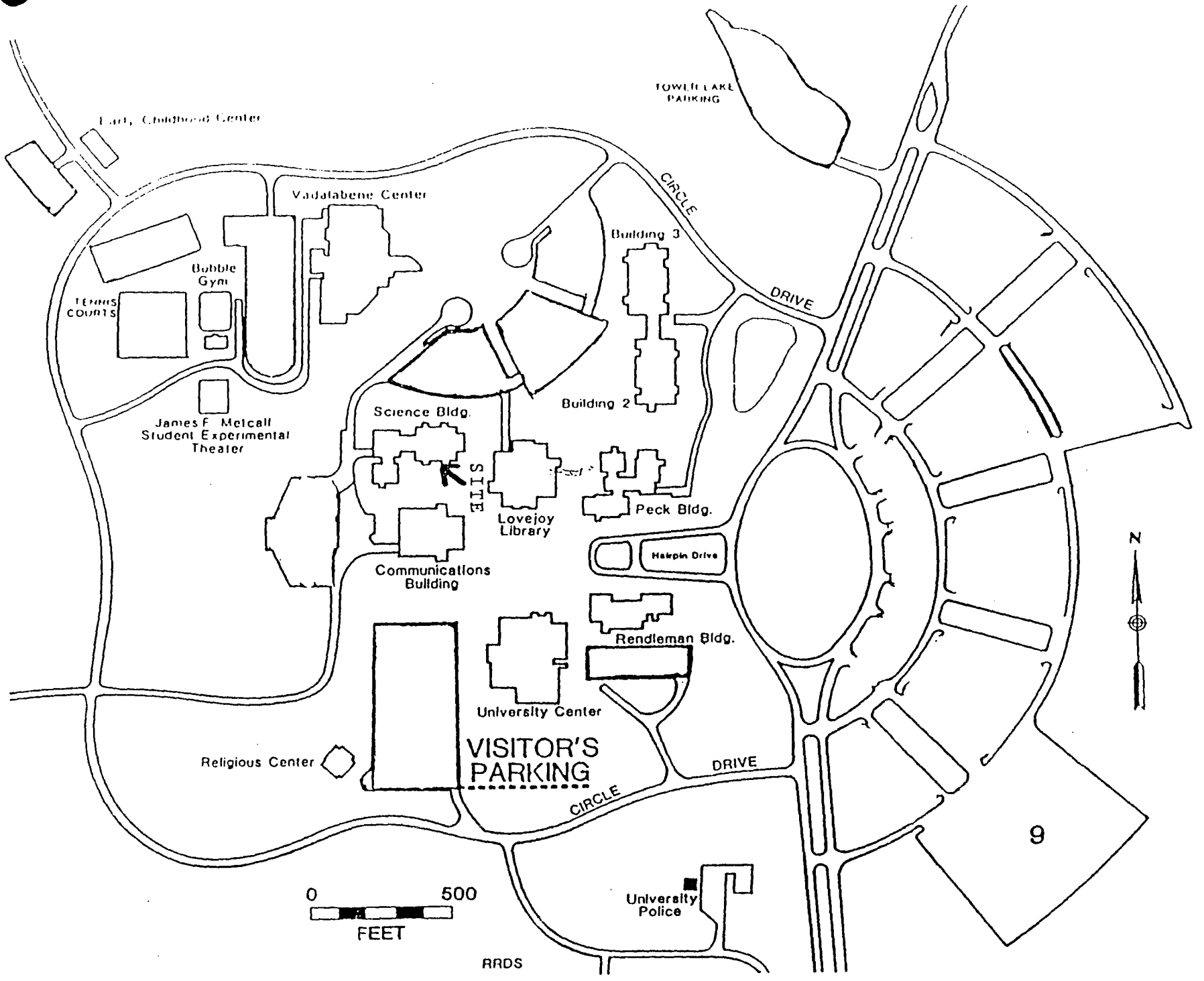
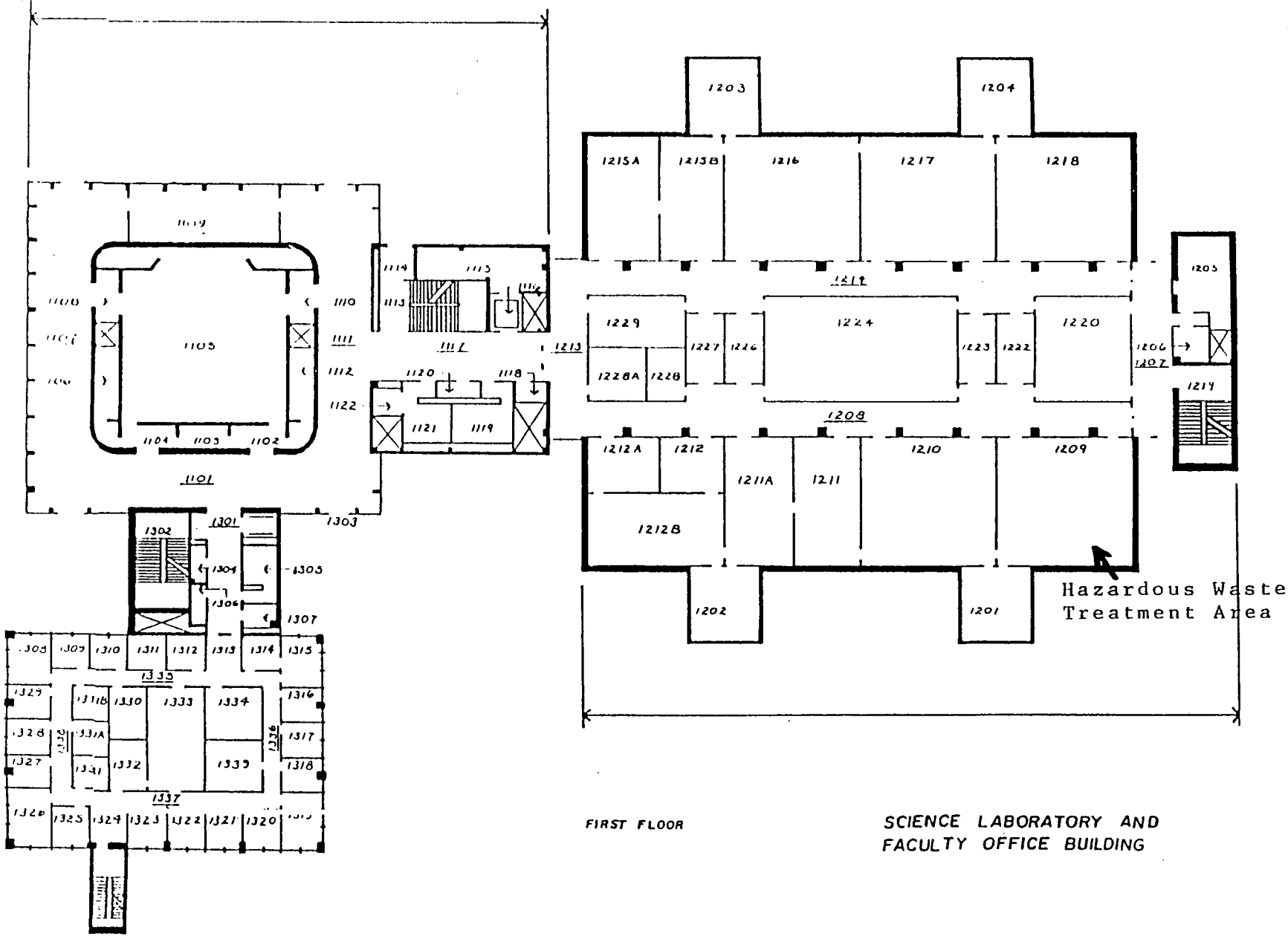


FIGURE 3 - Detailed Site Map



FIRST FLOOR

SCIENCE LABORATORY AND
FACULTY OFFICE BUILDING

REV. AUG. 27, 1985

FIGURE 4 - Floor Plan of Hazardous Waste Treatment Area

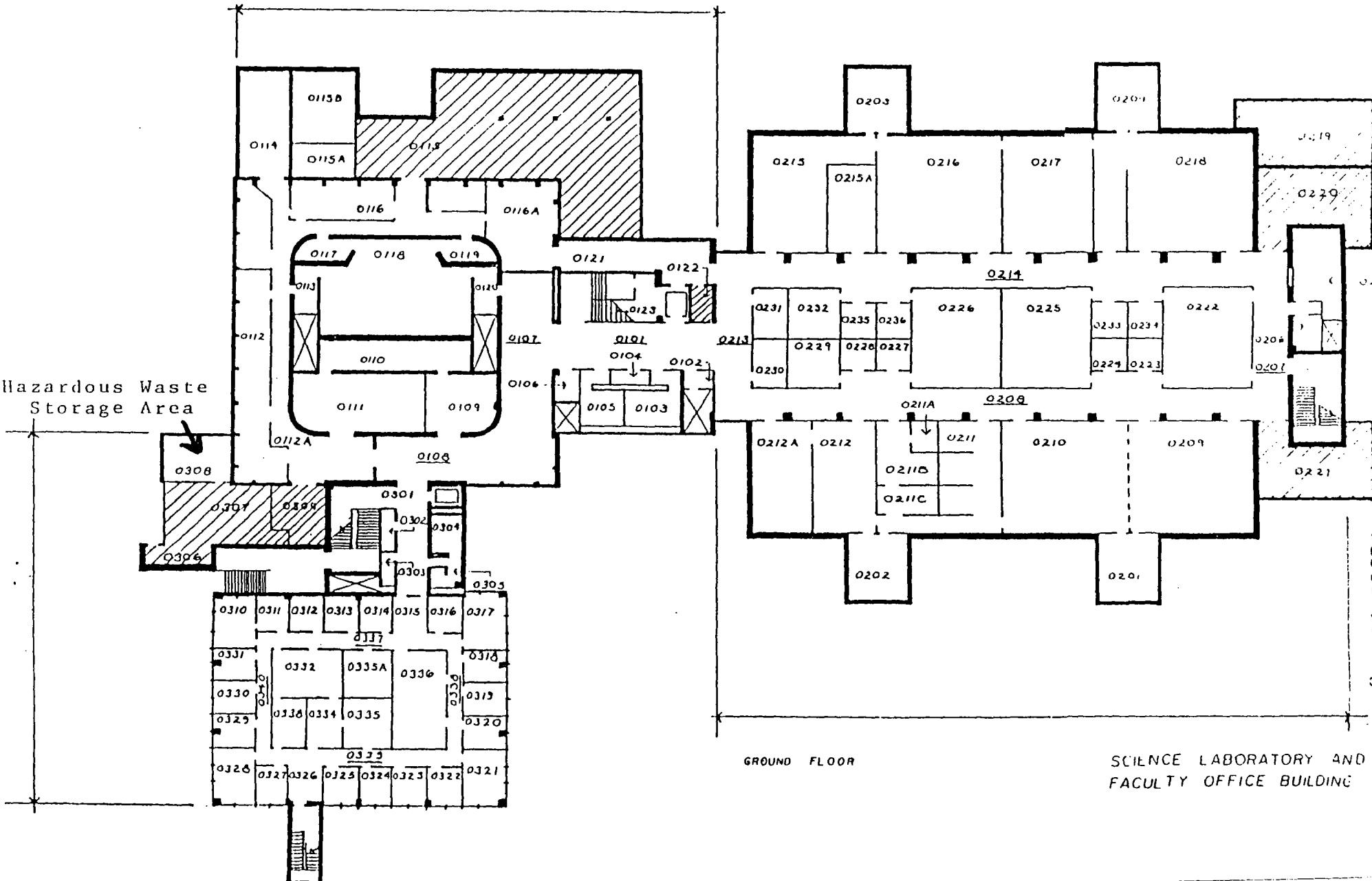


FIGURE 3 - FLOOR PLAN OF HAZARDOUS Waste Storage Area

in the treatment area. The following treatment activities were performed in this area:

1. Solvent distillation (2-5 gallons per day).
2. Metal precipitation (1-5 gallons per day).
3. Neutralization (1-5 gallons per day).
4. Evaporation (1-2 gallons per day).
5. Oxidation/reduction/other special chemical treatment (0.1-0.5 gallons per day).

The treatments were conducted on the laboratory benches which are approximately 24 feet long by 4 feet wide. The benches have a black epoxy resin hard top surface. Other treatment activities were performed in the fumehoods. There are five fumehoods located in the laboratory.

The storage (S01) area is 289 square feet (capacity = 200 gallons). The ceiling material consists of 2 and 1/2-foot wide concrete slabs which run the entire length of the room. The walls are cinder block construction on all sides except for the south wall. The south wall is constructed of brick and mortar material. The floor is concrete with no floor drains present. The floor is several inches lower than all the exits from the room. A concrete curb, as shown by Detail A of Figure 5 provides containment. No cracks were noticed during a recent field inspection of the visible portion of the concrete floor.

At present, in addition to the storage of hazardous waste, Room 0308 stores some of the chemicals required by the laboratories of the university. The room also contains substances that are listed in the Illinois Material Exchange Program. The chemicals are stored on wood shelves. The shelves and chemicals will be protected from damage during closure activities. The containers may be temporarily moved as required to properly clean the shelving. The shelves and chemicals for the lab and those listed on the Exchange Program will remain in the room after closure.

The Hazardous Waste Management Program does not dispose of hazardous waste on-site nor does it use ground impoundments or storage tanks. Because of this, ground water contamination is not a concern. SIUE is requesting that IEPA to allow for "clean" closure of both the treatment and storage areas. This will be discussed further in the next section on steps to closure.

The hazardous wastes generated and treated at SIUE are listed with respect to type of waste and quantity on Attachement 2. The inventory of wastes at SIUE varies, but all the stored wastes will be removed prior to implementation of the closure plan. Any wastes removed during the closure will be inventoried by the engineer and submitted with the closure documentation report.

STEPS TO ACCOMPLISH "CLEAN" CLOSURE

The following steps should be taken to accomplish "clean" closure of SIUE's TSD facilities:

1. Determine when closure is desirable.

2. Notify the Federal EPA and the Illinois EPA 180 days prior to closure.

3. Notify campus departments of the last day waste will be accepted.

4. Finish all treatments: neutralization, distillation, etc.

5. Contact hazardous waste disposal company to dispose of all remaining hazardous waste in SL 1209 and SL 0308. A cost estimate is provided in Attachment 5.

6. Procure cleanup contractor and review and approve the contractor's health and safety plan and decontamination plans.

7. Remove the analytical equipment from SL 1209 as required to complete the closure activities.

8. Decontaminate rooms SL 1209 and SL 0308 by steam cleaning and triple rinsing the rooms.

9. Alconox wash all textured surfaces before triple rinsing.

10. Vacuum all rinse water (approximately 165 gallons from SL 1209 and 110 gallons from SL 0308) and place in 55 gallon drums.

11. Hire an independent professional engineer to oversee closure activities and to certify closure was conducted in accordance with the approved closure plan.

12. Conduct sampling and analysis as detailed in the next section.

13. Dispose of drums of rinse water as appropriate once the results of the analysis are received.

14. Perform final inspection of facility. Submit closure documentation report to the IEPA.

15. Submit certificate of closure and withdrawal of the Part A application to the Federal EPA and the Illinois EPA.

16. After EPA inspection, if necessary, rectify any problems and repeat Steps 7 - 16.

17. File last annual report.

SAMPLING AND ANALYSIS PLAN

Sampling and analysis will be performed in accordance with U.S. EPA's SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods." The parameters to be tested for are presented in Table 1. The specified test methodologies are included in Attachment 6.

One sample will be collected of the final rinse water from the Hazardous Waste Storage Area. Another sample will be collected of the final rinse water from the Hazardous Waste Treatment area.

The listing of parameters may be revised during closure depending on the method of disposal of the rinse water. The testing will be conducted as required by the facility receiving the liquid. Rinse water shown "clean" by the chemical testing may, with the approval of the engineer, be released to the sanitary sewer system.

AIR EMISSIONS

Toxic fumes or odors are not anticipated to be created in significant quantities during closure. Provisions for monitoring of emissions with an Organic Vapor Analyzer or HNU Photoionization Meter should be incorporated into the Health and Safety Plan to be submitted by the contractor as described in the following section.

PERSONNEL SAFETY AND FIRE PREVENTION

The contractor will submit a Health and Safety Plan to the Director of Hazardous Waste at SIUE before conducting any work. The plan will detail all measures taken to protect all personnel (including contractors and visitors involved in the closure process or possibly exposed to hazardous waste by the closure activity. The plans should also include personnel decontamination, if necessary.

The cleanup operations must meet the requirements of OSHA's Hazardous Waste Operations and Emergency Response standard under the provisions of 29 CFR 1910. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of health and safety training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

The contractor shall submit a plan to clean both of the areas. The plan shall include methods to contain and collect the rinse liquid and cleaning residues. The plan must also contain provisions for the decontamination of all equipment used during the cleaning process. An

CONTINUED ON REVERSE

Table 1
List of Parameters to be Tested For

Parameter	Test Methods (EPA SW-846)
Volatile Compounds	
Acetone	8240
Benzene	"
Carbon Tetrachloride	"
Chlorobenzene	"
Chloroform	"
1,1- Dichloroethane	"
1,2- Dichloroethane	"
Ethanol	"
Methylene Chloride	"
1,1,2,2-Tetrachloroethane	"
Toluene	"
1,1,1- Trichloroethane	"
1,1,2- Trichloroethane	"
Vinyl Chloride	"
Xylene	"
Semi-Volatile Compounds	
Aniline	8270
2-Methylphenol (o-cresol)	"
4-Methylphenol (p-cresol)	"
Naphthalene	"
4-Nitroaniline	"
Nitrobenzene	"
Phenol	"
Metals and Miscellaneous Compounds	
Chromium	7000
Cobalt	"
Lead	"
Magnesium	"
Mercury	"
Potassium	"
Sodium	"
Tin	"
Aluminum	6010
Barium	"
Calcium	"
Copper	"
Iron	"
Manganese	"
Nickel	"
Silver	"
Zinc	"
Total and Amenable Cyanide	9012
Total Organic Halides	9020
Sulfides	9030
Sulfate	9036
Total Organic Carbon	9060
Nitrate	9200
Chloride	9250

inspection of all surfaces to be steam cleaned shall be made by the contractor and engineer prior to the work being conducted. Any cracks holes or other locations where the cleaning liquid may be able to penetrate shall be sealed.

Since chemicals for laboratory purposes will remain in each area, the owner and engineer will inventory each jar or container prior to the cleanup activities. A second inventory shall be conducted after the cleanup activities. The contractor will be instructed to avoid damaging, moving or interfering with laboratory chemicals or equipment.

SCHEDULE FOR CLOSURE

The approximate timetable for closure is as follows:

Activity	Date
Reduce inventory	Present
Select consultant to review and submit closure plan	December 15-30, 1991
Submit notice of closure to IEPA	January 15, 1992
Closure plan approved	April 15, 1992
Clean up and test	April 15 through June 15, 1992
"Clean" closure achieved	June 15, 1992
Submit closure documentation report	July 1, 1992

When closure is completed, SIUE will submit to the IEPA certification by both the owner and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in this closure plan.

Should it be necessary to discuss the Hazardous Waste Management Program at SIUE during the post-closure period, contact:

Director of Hazardous Waste Management
Science Building
Room SL 2322
Southern Illinois University at Edwardsville
Edwardsville, Illinois
(618) 692-3562

CLOSURE DOCUMENTATION REPORT

Upon completion of closure activities, a closure documentation report will be submitted in accordance with 35 IAC 725.215, amended March 24, 1987 (PCB R86-28). The report will include the following information:

a. The volume of waste and waste residue removed, including the waste (residue) resulting from decontamination activities;

b. A description of the method of waste hauling and transport;

c. Waste manifest numbers or copies of manifests from removal of waste and waste residues;

d. A description of the sampling and analytical methods used, including sample preservation and chain-of-custody methods;

e. A chronological summary of closure activities and the costs involved;

f. Color photo documentation of closure showing the unit before, during and after closure; and

g. Tests performed, methods and results.

STATUS AFTER CLOSURE

The hazardous waste treatment room, SL 1209, will return to use as a chemical laboratory. The lab will no longer conduct any hazardous waste treatment. The hazardous waste storage room, SL 0308, will operate in compliance with the SQG regulations.

SIGNATORY REQUIREMENTS

The closure plan includes the Closure Plan Certification Statement (Attachment 7) and appropriate signature. This signature is the Chief Executive Officer of SIUE in accordance with 35 IAC 725.218(h) and 702.126.

The Closure Documentation Report will include the Closure Certification Statement (Attachment 8). Upon completion of closure activities this will be signed by the appropriate parties.

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